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Development Aid and Access to Water and Sanitation in sub-Saharan Africa

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AFRICAN DEVELOPMENT BANK GROUP

Development Aid and Access to Water and Sanitation in sub-Saharan Africa

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Office of the Chief Economist

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Abstract

Providing safe drinking water and basic sanitation to citizens is one of the major challenges facing the African Governments. The issues of access to safe drinking water and improved sanitation is well articulated and prioritized in the various national, continental, and international policy documents, strategy papers, declarations, and conventions. And yet it is not clear if the provision of sustainable access to safe drinking water and basic sanitation has been given the requisite financial and other support by the SSA policy makers and donors. The principal objective of this paper is to compare countries' performance in the water and sanitation sector and analyze how effectively they used the development aid received for the Water and Sanitation sector (WSS). Much has been written on Development Aid Effectiveness, but the focus of attention has often been on how the donors operate, and how the recipients use the money. In this context, the paper utilised an innovative standardized measurement framework known as-the Watsan Index of Development Effectiveness (WIDE) - which compares drivers of progress with results achieved, and ranks African countries by the level of outcome obtained per unit of available input. In particular, how effectively they used the development aid received for the water and sanitation sector. The WIDE is made up of two composite information layers, the Resources (input drivers such as aid received, GDP, water resources, and governance level), and the Progress Outcomes (access to water, access to sanitation, and progress in the two). We also performed econometric analyses to explore the linkages between interventions designed to promote development, and the outcomes from that development process, in the water and sanitation sector. These analyses were further validated by presentation of the WSS sector situation of four case study countries namely, Kenya, Madagascar, Burkina Faso and Uganda.

Keywords: Water, Sanitation, Development Aid, Development Effectiveness
JEL codes: C18;,F35, O18, Q25

1. INTRODUCTION

Providing safe drinking water and basic sanitation to citizens is one of the major challenges facing the African Governments. The issues of access to safe drinking water and improved sanitation is well articulated and prioritized in the various national, continental, and international policy documents, strategy papers, declarations, and conventions. And yet it is not clear if the provision of sustainable access to safe drinking water and basic sanitation has been given the requisite financial and other support by the SSA policy makers and donors. An even more important issue is understanding how the African governments have utilized the limited available ODA allocated to Water Supply and Sanitation (WSS) sector to guarantee the highest possible performance and deliverance of WSS services to the citizens.

In the face of heterogeneous performance of different SSA countries, it becomes fundamental to understand the factors that determined success or failure in increasing access to water and sanitation, in order to improve the targeting of future interventions, including those funded by development aid, and avoid the repetition of past errors. The objectives of this paper are to identify the factors determining countries' performance in providing access to safe water and improved sanitation; compare countries' performance in the water and sanitation sector and analyze how effectively they used the development aid received for the water and sanitation sector. In this context, we develop a standardized measurement framework-the *Watsan Index of Development Effectiveness (WIDE)*, which compares drivers of progress in water access and sanitation with results achieved, and ranks countries by the level of outcome obtained per unit of available input.

Thus, the further contents of the paper are as follows. Section 2 presents the analysis of the relationship between development aid dedicated to policies and projects in the field of water and sanitation in SSA countries, with progress made in improving access using a standardized measurement methodology known as the Watsan Index of Development Effectiveness and other relevant indicators. Section 3 highlights the results of four country case studies (Burkina Faso, Kenya, Madagascar and Uganda), and reveal more detailed insights, beyond the general trends analysed in Section 2. The fourth section presents expert and beneficiaries views on key success factors or failures of WSS sector and specific projects. Finally, section 5 synthesizes the insights obtained and spells out specific recommendations for enhancing the performance of WSS sector and development aid effectiveness.

2. DEVELOPMENT AID AND ACCESS TO WATER SUPPLY AND SANITATION IN SUB SAHARAN AFRICA: AN OVERVIEW OF TRENDS

This section presents the trends in development aid to SSA, focusing in particular on the water and sanitation sector, reviews progress in access to water supply and sanitation, and analyzes the relationship between resources, including aid, and results, by applying the innovative WIDE index methodology.

2.1 Official Development Assistance to sub-Saharan Africa

In total, from 1990 to 2006, Official Development Assistance (ODA) [2] accounted for 84.4% of aid to this region and is vitally important to the development of many of the countries of SSA. The most important bilateral ODA flows to SSA over the period of our analysis originate from the 22 countries of the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD)[3]. In SSA, between 1990 and 2006, private flows contributed 15.6% of total aid, and OOFs were virtually zero. We therefore focus in our analysis on ODA from DAC countries and from the main multilateral organizations[4], as reported by OECD Stat. We use data on gross ODA from OECD's Creditor Reporting System (CRS), which contains information on commitments from 1995 and disbursement from 2002.

Official Development Assistance to the Water and Sanitation Sector: In spite of its importance, the share of development aid allocated to water and sanitation has been low. Between 2001 and 2006, the region received 24% of global aid to the water and sanitation sector. When the figures are deflated by population, the trend is however less impressive. Per-capita ODA to the sector grew from USD07 1.28 a year in 1995 to USD07 1.75 in 2008[5]. Furthermore, in spite of increasing international support, aid provided for WSS projects as a percentage of overall ODA only reached 4.1% in 2008, rising from just 2.8% of total ODA in 2002 (Figure 1). Overall this indicates that while the level of aid available to the water and sanitation sector has been increasing in real terms, it is still the case that the allocation to that sector is just a small fraction of the total, which may not be sufficient to meet the targets of the MDGs.

The inter-sectoral breakdown presented in Figure 2 provides interesting information on the allocation of ODA to water and sanitation. This is categorized in the following seven sub-groups: *Water resources policy and administrative management; Water resources protection; Water supply and sanitation - large systems; Basic drinking water supply and basic sanitation; River development*; *Waste management/disposal*; and *Education and training in water supply and sanitation.* Over the period 2002-2008, large water supply and sanitation systems received the largest share of ODA (39%), followed by basic systems (31%) and by water resources policy and administrative management (25%). An analysis of the trends points to widening differentials, with the flow for basic drinking water and sanitation growing by 235% between 2002 and 2008, and the flows for education and training increasing by only 19% over the same period.

[2] For a definition of ODA, see OECD 2008, "Is it ODA?" (http://www.oecd.org/dataoecd/21/21/34086975.pdf). In the rest of this report, the terms ODA and aid are used as synonyms.

[3] Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States, European Community.

[4] World Bank Group, African Development Bank Group, East African Development Bank (EADB), West African Development Bank (BOAD), European Commission (EC), European Investment Bank (EIB), International Fund for Agricultural Development (IFAD), Islamic Development Bank (IDB), Nordic Development Fund (NDF), The Nordic Investment Bank (NIB), OPEC Fund for International Development (OPEC Fund).

[5] Constant 2007 USD.

Figure 1: Gross Official Development Assistance to water and sanitation in SSA

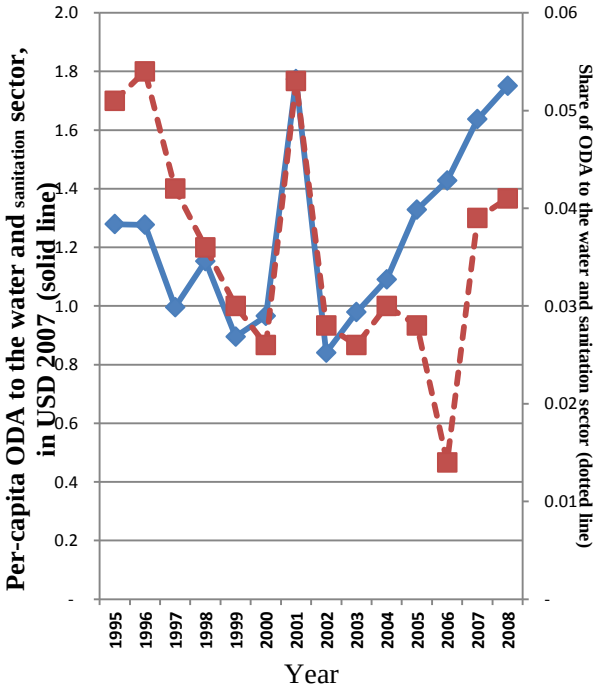
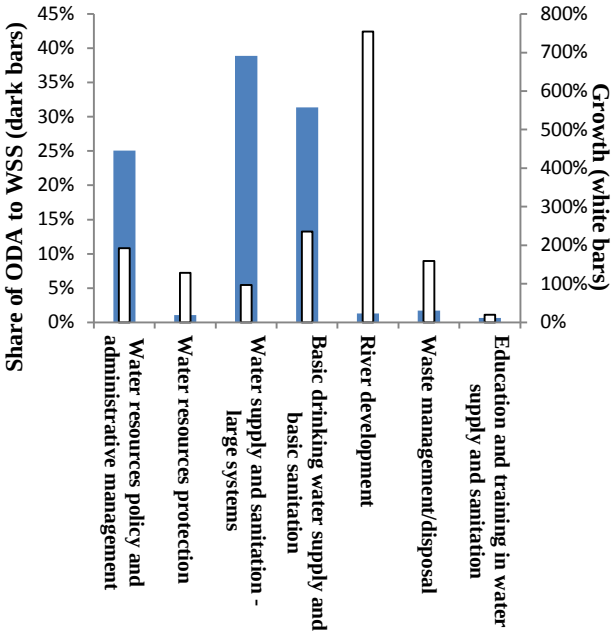


Figure 2: SSA Gross ODA disbursements to WSS sector over the period 2002-2008, by project typology



Source: Authors' calculations based on OECD's Creditor Reporting System and AfDB Data Platform

Using calculations based on OECD CRS (March 2010), the highest amounts of ODA to WSS went to Senegal, Ghana, Burkina Faso, Uganda, Tanzania, Mozambique, and Zimbabwe, all above USD07 500 million over the period 1995-2008. When accounting for population size, the island states emerge as the main recipients. The highest amounts are recorded in Sao Tome and Principe, Mauritius, and Seychelles, followed by Gabon, Equatorial Guinea, Senegal, and Cape Verde, all above USD07 100 per capita over the period 1995-2008 (Annex 1). This is likely to be due to scale effects, and to the relatively high cost of projects in countries with small populations. In relative terms, fourteen countries showed greater focus than average on water and sanitation issues, dedicating more than 5% of total ODA to the sector (Annex 1). These are Benin (6%), Burkina Faso (9.5%), Botswana (5.7%), Gabon (11.2%), Guinea (8.9%), Equatorial Guinea (15.2%), Lesotho (6.7%), Mauritius (34.4%), Namibia (5.3%), Niger (6.0%), Senegal (8.8%), Sao Tome and Principe (6.8%), Swaziland (9.4%), and Seychelles (13.6%).

The contribution of the AfDB to WSS provision: From 1967-2006, the African Development Bank group (AfDB) has committed more than USD 4 billion (undiscounted nominal value) ODA to WSS in Africa, about 7.7% of total approvals. More recently, over the period 2005-2008, the AfDB disbursed USD 495 million for water and sanitation projects in SSA (in constant 2007 USD), equivalent to about 9% of total ODA disbursements to the sector in the region (OECD CRS). In 2008, the sector accounted for 10.8% of total African Development Fund (AfDF) disbursements, up from 5.4% in 2005.The Bank has supported the implementation of the Rural Water Supply and Sanitation Initiative (RWSSI), and ensures funding for projects and studies in the water sector. The AfDB also serves as a trustee for the *African Water Facility (AWF) Special Fund*, provides support to the NEPAD Water and Sanitation Program. The Bank also manages

the *Multi-Donor Water Partnership Program (MDWPP)* to promote effective water management policies and practices, at regional and country levels and to operationalize the Bank's Integrated Water Resources Management (IWRM) Policy in the RMCs.

2.2 Access to water and sanitation

Progress towards target 7C of the MDGs of halving by 2015 the proportion of people without sustainable access to safe drinking water and improved sanitation facilities remains slow. The rate of access to improved water sources increased from 49% in 1990 to 60% in 2008, a marginal increase of less than 1% a year. Over the same period, growth in access to improved sanitation facilities was even more disappointing, from 27% to 31% (source: JMP). This implies that, in 2008, 328 million people in the region still lived without access to drinking water, 84% of which in rural areas; and 567 million individuals still lacked access to improved sanitation. These numbers are significant and a serious cause for concern. In a sub-sample of 21 SSA countries, only 16% of the poorest quintile of the population was found to have access to improved sanitation, compared with nearly 80% of the population in the richest quintile. To make matters worse, the divide between progress in water and sanitation is set to widen (UN MDG Report, 2008 and UNDP 2005).

Although progress is slow on a regional basis, performance is heterogeneous across countries and it is possible to identify the good performers (Annex 1). The largest improvements were recorded by Malawi (from 40% in 1990 to 80% in 2008), Burkina Faso (from 41 to 76%), Namibia (from 64 to 92%), Ghana (from 54 to 82%), Mali (from 29 to 57%), Cameroon (from 50 to 74%), Lesotho (from 61 to 85%), Uganda (from 43 to 67%), and Ethiopia (from 17 to 38%). On the other hand, access regressed in 5 SSA countries. The magnitude of the drop ranges from 1% in Mauritius and Tanzania to a 8% in Sudan and Sierra Leone, which experienced conflicts over the period covered by the analysis. In terms of access levels, the best performers are Botswana, Comoros, Djibouti, Gambia, Mauritius, Namibia, and South Africa, all with rates above 90% in 2008.

Improvement in sanitation coverage throughout SSA is disappointingly small. The largest increases were recorded in Angola (from 25% in 1990 to 57% in 2008), Rwanda (from 23 to 54%), Botswana (from 36 to 60%) and Central African Republic (from 11 to 34%). Over the same period, however, 5 countries showed deterioration rather than an improvement in terms of access to sanitation, with the drop ranging from 1% for Togo to 10% for Djibouti. In 2008, access to improved sanitation remains extremely low. Only four countries (Botswana, Gambia, Mauritius and South Africa) record rates of 60% or higher. In ten countries (Benin, Burkina Faso, Eritrea, Ethiopia, Ghana, Madagascar, Niger, Sierra Leone, Chad and Togo) access remains below 15%. Countries performances in the water and sanitation sectors were not necessarily correlated. For example, Burkina Faso and Ghana achieved remarkable progress in access to water while at the same time recording minor improvements in access to sanitation.

Trends in rural areas: Since 1990, 36 SSA countries have recorded a positive trend in access to improved water sources in rural areas. The region as a whole shows an increase of 11%, with performance varying greatly across countries. Growth in rural access rates to improved water sources ranged from 1% for the Democratic Republic of Congo to 44% for Malawi. On the other hand, 8 countries experienced a regression, with drops ranging from 23% in Sierra Leone and 1% in Tanzania. Rural areas face the most serious problems in sanitation coverage. Rural access in the region increased only by 3% between 1990 and 2008, and over three quarters of SSA rural

populations still lacked access in 2008. Yet, some relatively good performers can be identified. For example, rural access to sanitation grew by 33% in Rwanda, 23% in Central African Republic, 21% in Cape Verde.

Trends in urban areas: As may be expected, access to improved water sources is much higher in urban than in rural areas. However, no progress was made at the regional level between 1990 and 2008, with the urban access to improved water sources stagnating at 82%. Once more, country performance was highly heterogeneous. Progress was recorded in 28 countries, with variations as high as 45% in Somalia, 39% in Niger, 30% in Angola, and 27% in Mali. On the other hand, 13 countries recorded a regression in urban water coverage, with access dropping by as much as 21% in Sudan, 19% in Rwanda, and 14% in both Tanzania and Burundi, 10% in the Democratic Republic of Congo. In contrast, urban access to sanitation in the region was disappointingly stable, increasing only marginally from 43% in 1990 to 44% in 2008. Some 28 countries recorded progress, with the best performances in Angola (+28%), Central African Republic (+22%), and Mauritius (+21%). 11 countries regressed, with drops as high as 10% in Djibouti and 8% in Sudan. These apparently disappointing figures can be explained to a large extent by the increased population in urban areas in all countries.

2.3 The Watsan Index of Development Effectiveness

In line with the objectives of this report to compare countries' performance in the water and sanitation sector and analyze how effectively they used the development aid received for the water and sanitation sector, we develop a standardized measurement framework -the *Watsan Inde*x *of Development Effectiveness (WIDE)*. The framework compares drivers of progress with results achieved, and ranks countries by the level of outcome obtained per unit of available input. The WIDE is made up of two composite information layers, the *Resources* (measuring the input *drivers*), and the *Progress or Outcomes.* Each of these is calculated as a composite index, based on a number of pre-defined factors influencing progress in the water and sanitation sector.

We consider four types of *inputs*, all measured over the period 1995-2008: (i) Development aid to the water and sanitation sector, average yearly per-capita ODA to the sector; (ii) Domestic resources, the average per-capita GDP; (iii) Water resources, the quantity of per-capita renewable available water[6]; (iv) Government capacity (a component of human resources). *Outcomes* are measured across four dimensions: (i) Progress in the share of population with access to improved water sources, from 1995-2008; (ii) Progress in the share of population with access to improved sanitation facilities, from 1995-2008; (iii) Share of population with access to improved water sources in 2008; (iv) Share of population with access to improved sanitation facilities in 2008.

Data on ODA is from the OECD CRS. Series on population, GDP and governance are from the AfDB data platform. Data on water resources is from the Food and Agriculture Organization (FAO) AQUASTAT database. All information on access to water and sanitation is from the Joint Monitoring Program. For governance in the water and sanitation sector, we used Mo Ibrahim Index of African governance for rule of law, transparency and corruption. For simplicity,

[6] Renewable water resources are the total resources that are offered by the average annual natural inflow and runoff that feed each hydro system (catchment area or aquifer). Source: FAO AQUASTAT Information System on Water in Agriculture, Food and Agriculture Organization of the United Nations.

resources and *outcomes* are aggregated by using an un-weighted average[7]. This overcomes a value judgment that would be made by policy makers.

There are a number of assumptions underlying the assessment process presented here:

- A country with a high level of either domestic resources or aid receipts should perform better;
- Natural factors affect the effectiveness of aid flowing to the water and sanitation sector;
- Human capacity and good governance are a prerequisite for good water management;
- A country which has adequate water resources and receives development aid should be able to exhibit measureable progress in water and sanitation provision, and this progress is facilitated by effective institutional arrangements.

2.3.1 Structure of the WIDE

Before the estimations, the data is first normalized and converted to an index value that ranges between 1 and 100, with high values indicating positive conditions. This is to ensure that the index is not dominated by a single variable having large absolute values. The transformation of both input or drivers and outcome or progress is based on the following expression:

$$\bar{x}_i = \frac{x_i - x_{\min}}{x_{\max} - x_{\min}} \qquad (1)$$

Where x_{min} and x_{max} are the minimum and the maximum value observed in the sample, and i is the subscript for each SSA country. The normalized variables are then combined in simple un-weighted averages. Two indexes are then calculated, for inputs and outcomes, according to the following formulas:

$$Inputs_i = \frac{\bar{aid}_i + \bar{gdp}_i + \bar{watres}_i + \bar{governance}_i}{4} \qquad (2)$$

$$Outcomes_i = \frac{\bar{\Delta w}_i + \bar{\Delta s}_i + \bar{w}_i + \bar{s}_i}{4} \qquad (3)$$

Where $\bar{aid}, \bar{gdp}, \bar{watres}, \bar{governance}, \bar{\Delta w}, \bar{\Delta s}, \bar{w}, \bar{s}$ are the input drivers and the outcome indicators described in the previous section (in the same order), transformed as in expression (1). The two sub-indexes can be used to rank countries by intensity of inputs and results. These are then combined to obtain the overall index of performance:

$$WIDE_i = rank\left(Inputs_i\right) - rank\left(Outcomes_i\right) \qquad (4)$$

A value of 0 indicates that the country has the same ranking for inputs and outcomes, e.g. the country with most resources achieved the best results. Positive values indicate that a country had an outcome ranking in excess of what could be expected given its resources. Large negative values, on the other hand, suggest poor performance. The WIDE enables an assessment to be

[7]In most cases of index development, additive formulae are used. It is however also possible to develop indices with multiplicative structure, but this is beyond the scope of this work. For more discussion of the use of Multiplicative indices for the HDI, see Herrero et al. (2007).

made of how effectively each country has used its resources to achieve progress in the water and sanitation sector.

2.3.2 Empirical Evidence

Gabon and Mauritius are the most endowed countries. Both received more than USD 10 per capita per year of ODA to the water and sanitation sector, and had a per capita GDP in excess of USD 5,000 over the period covered in the analysis. Gabon has also the highest endowment of water resources, with about 131,216 m^3 of renewable water per capita per year, which is about 58 times that of Mauritius. On the other hand, Mauritius exhibits the highest performance for the rule of law and absence of corruption in the region. At the other end of the spectrum, Zimbabwe and the DRC have the lowest resource endowment, with extremely low values of per-capita aid to the water and sanitation sector and of the index of rule of law.

The best outcomes are reported for Malawi, Gambia, Botswana, and South Africa. Malawi made impressive progress in water provision (+28%). Access to sanitation, although still at 56%, also grew by 9 percentage points. Gambia, Botswana and South Africa report slower progress. Next to the best performers are Angola, Mauritius, Namibia, Comoros, Cape Verde and Swaziland, all with scores of above 50 points. At the other end of the distribution, Sierra Leone and Madagascar recorded the worst results, both displaying slow progress and low access rates.

2.3.3 Country Performance: the WIDE Index

The WIDE index is presented in Annex 2, which ranks the countries according to the difference between output and input ranking[8]. Values range between +25 to -35. The six best performers, all with WI values of 20 or above include Angola (25), Rwanda (23), Zimbabwe (23), Central African Republic (23), Malawi and Comoros (both with 20). Angola's performance is commendable. In spite of ranking 30th in resource availability, it achieved the 5th highest outcomes. This suggests that the scarce inputs were used relatively more effectively than in other SSA countries.

2.3.4 Caveats to the use of the WIDE

Some variables may have close to uniform distributions that increase the relative weight (compared to more skewed ones) in the input or outcome sub-index[9]. We looked into the possibility of transforming some variables (e.g. by taking their logarithm) to reduce distribution skewness. We found that this changed the ranking of some countries by a few positions, but did not alter the overall picture. As a way of overcoming any implicit weighting of component values influencing overall scores, we recommend that comparisons of inputs and outcomes be made on the basis of the ranking in the group, rather than on the raw score. The structure of the WIDE was chosen accordingly (as a difference of rankings, rather than e.g. as a ratio between outcome and input indexes).

Finally, it is important to notice that the structure of the outcome drivers partly penalizes countries that had already achieved high percentages of access to water and sanitation in the baseline year. For example, a country that had reached universal access in 1995, and maintained

[8] All rankings refer to the subsample of 45 SSA countries for which all data on input and outcomes is available (all but Djibouti, Seychelles and Somalia).

[9] For a discussion on the issue of scale relating to the use of indices in water management, see Sullivan and Meigh, 2007

it in 2008, will have two positive outcome drivers (for end of the period access to water and sanitation). Another country that had no access in 1995, and recorded progress to reach universal access in 2008 will have four positive outcome drivers (two for progress, two for access at the end of the period). The latter will record a higher outcome score.

3. COUNTRY CASE STUDIES[10]

3.1 Introduction

This Section presents information from four case study countries, namely Madagascar and Burkina Faso representing Francophone countries, and Uganda and Kenya representing Anglophone countries. We use the collated data about the case studies to illustrate the application of the WIDE analytical framework.

3.2 The Madagascar

3.2.1 Outcomes: Status of Access to Water and Sanitation

Figure 3 reveals that in 2008, the proportion of Malagasy's urban and rural populations with access to improved water supply stood at 71% and 29% respectively.

Figure 3: Access to Improved Water Sources for Madagascar

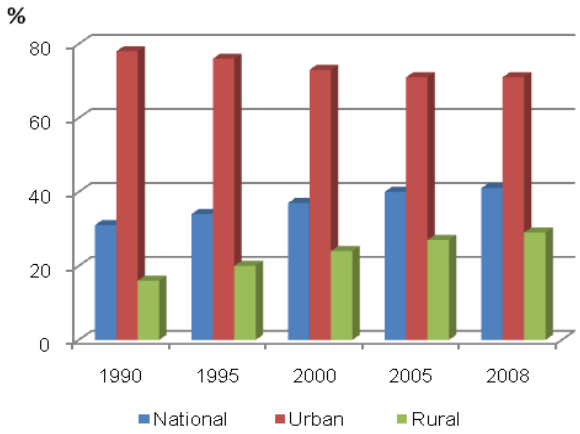
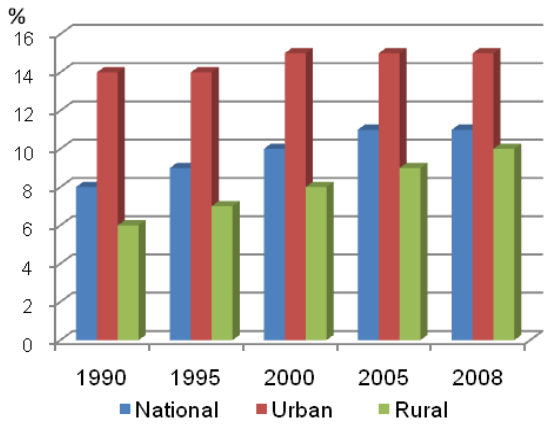


Figure 4: Access to Improved Sanitation Facilities for Madagascar



Sources: Authors, using on line databases of WHO / UNICEF

At the national level, access to improved water sources increased from 31% in 1990 to 41% in 2008, an increase of 10% in 18 years (Figure 3). In 1990, about 62% more urban people had access to water compared to rural dweller, but in 2008 this difference dropped to 52%. The proportion of Malagasy with access to improved sanitation increased only from 8% in 1990 to 11% in 2008, an increase of 3% point in 18 years (Figure 4). In 1990, about 8% more urban people had access compared to rural dwellers, but in 2008 this difference dropped to 5%.

[10] The information on progress in water and sanitation from the case study countries varies considerably depending on data sources. For example, data from government sources is different from those international sources like JMP and UNDP. There are also noticeable discrepancies in data from international sources. However, analyses in this report are based on data from WHO/UNICEF JMP.

Currently, the proportion of urban and rural population with access to improved sanitation facilities is 29% and 10% respectively.

Progress towards water and sanitation targets of the MDGs has been very slow in Madagascar. For the water sector, in 2008, 59% of the population is without improved water compared to 69 % in 1990. Projections indicate that by 2015, some 13.2 million Malagasy's will still be without access to improved water sources. This is about 20% more than the MDG target of 8.4 million people, a difference of about 4.82 million people. The situation is worse in term of improved sanitation coverage. The projection for the sanitation sub-sector is 21 million people lacking access to improved sanitation services in 2015. This is about 10 million people more than the 11 million targets in the MDG. From these trends therefore, it is difficult for Madagascar to meet the MDG target.

3.2.2 Drivers of Access to Water and Sanitation Services

According to the FAO Aquastat database the total internal renewable water resources was estimated at about 33.7 billion m^3. The average precipitation in volume is 888.2 billion m^3 per year. The per capita renewable water resources are about 17,634 m^3 per inhabitant per year as at 2008. Madagascar's total ODA for 2004 represented 28.3% of the GDP (USD1,2 billion,) (IRIN, 2007). Both the AfDB and the World Bank have funded rural water supply and sanitation projects, under the umbrella of the National Program for Safe Water Supply and Sanitation (PNAEPA). For major bilateral and multilateral donors in Madagascar, International Development Association (IDA) led all other donor agencies with an aggregate aid of USD 66 million between 2002 and 2009. IDA support to Madagascar is three times more than the aid flow from the second largest donor France (USD 19.9 million) during the same period. France was followed by AfDF (USD 19.7 million) and Japan (USD 15.5 million). Other donors in the top 10 list are European Union, Germany, UNICEF, Belgium, UNDP, and Switzerland.

The USD 19.7 million ODA disbursed by the AfDF on the water and sanitation sector in Madagascar between 2002 and 2009 represents 3.1 % of the Bank's total ODA for that period on all sectors in the country. This very low amount is one of the reasons why Madagascar today is poorly served in terms of water and sanitation provision. As presented in Annex 3, the total investment required per year for the next 5 years in order to achieve the WSS MDG targets by 2015 is USD 119 million per year; water supply (USD 54 million) and sanitation (USD 65 million).

Created in 2008, the Ministry of Energy and Mining's (MEM) is now responsible for developing and promulgating water and sanitation policy, assessing water resources, and for other water supply undertakings. The Ministry of Water, also created in 2008, was established as a general directorate (i.e. General Water Directorate) and it sits under the authority of the Ministry of Energy and Mines. The Malagasy NGOs NGOs (Non-Government Organisation) and private sector are very active in WSS. The NGOs are more visible in water supply projects in rural areas of Madagascar. The communities especially the users are always carried along and consulted when decisions are taken. They also contribute towards the preparation of studies and work implementation and play a significant role in maintenance and management of facilities, especially through the payment for access charges. Madagascar's conduct surveys to improve M&E (UNDP, 2009). However, the country needs to harmonize the different concepts and definitions used in the various surveys and tools.

3.2.3 Relationships between inputs (drivers) and outcome: Application of the WIDE

Table 1 and Annex 4 provide the summaries on Madagascar's WIDE analysis. Much more emphasis on sanitation is needed if real progress in national development is to be made.

Table 1: Input Drivers and Progress Outcomes of the Watsan Index for Madagascar

Watsan Index of Development Effectiveness components		**Scores**	**Overall Index**	**Rank [11]**	**WIDE**
Input Drivers	Development aid to the water and sanitation sector, as measured by the average yearly per-capita aid to the sector	3	20	14	-30
	Domestic resources, as measured by average per-capita gross domestic products	3			
	Water resources, measured by the quantity of per-capita renewable available water	14			
	Government capacity (a component of human resources), measured by the Ibrahim index of African governance for rule of law, transparency and corruption	58			
Progress Outcomes	Progress in the share of population with access to improved water sources, over the period 1995-2008	41	17	44	
	Progress in the share of population with access to improved sanitation facilities, over the period 1995-2008	19			
	Share of population with access to improved water sources in 2008;	5			
	Share of population with access to improved sanitation facilities in 2008	2			

Source: Author's Calculations

As expected, the per-capita ODA disbursement to the WSS correlates positively with access to improved water sources and improved sanitation facilities with a coefficient of 0.716 and 0.515 respectively (Table 2).

Table 2: Correlation analysis

	Population	Human poverty index	Life expectancy	Mortality rate	ODA Disbursement to Water and Sanitation	Per capita ODA	GNI per capita
Improved water source, (% of total population with access)	0.6871 (0.0597)*	0.0294 (0.2157)	0.6655 (0.0717)	-0.6613 (0.0742)	0.7698 (0.1279)	0.7157 (0.174)	0.721 (0.0436)
Improved sanitation facilities (% of population with access)	0.1447 (0.7103)	-0.8717 (0.1283)	0.1748 (0.6529)	-0.1769 (0.6489)	0.5363 (0.3515)	0.5153 (0.3742)	-0.2043 (0.6275)

*Figures in parenthesis show probabilities at which the statistical significance of the correlation coefficient may be evaluated

[11] All rankings refer to the subsample of 45 SSA countries for which all data on input and outcomes is available (all but Djibouti, Seychelles and Somalia).

Similarly, there is a positive association between GNI per capita, ODA Disbursement to Water and Sanitation and the proportion of the population using improve water source. Surprisingly, the relationship between people using improved sanitation facilities correlates negatively with GNI per capita, which may reflect the subdued attention that the sanitation sometimes get in budgetary allocations.

3.2.4 Lessons learned and Conclusion

A key concern for Madagascar is the very low level of access to water and sanitation in both rural and urban communities. Dogged by poor quality data, the poorly resourced government achieves low outcomes, reflecting relatively low levels of aid. Added to this, the economy has suffered from high levels of inflation, and capacity to absorb development aid effectively is limited. In Madagascar, a major constraint in WSS is inadequate capacity, especially for skilled manpower. Another major cause for concern is the funding gap, and the ability to absorb and effectively manage outside donor contributions.

3.3 Kenya

3.3.1 Outcomes: Status of Access to Water and Sanitation

In 2008, the proportion of Kenya's urban and rural populations with access to improved water supply stood at 83% and 53% respectively. At the national level, access to improved water sources has increased significantly, from 43% in 1990 to 59% in 2008, an increase of 16% in 18 years (Figures 5). In 1990, about 59% more urban people had access to water compared to rural dweller, but in 2008 this difference dropped to 31%.

Figure 5: Access to improved water sources for Kenya

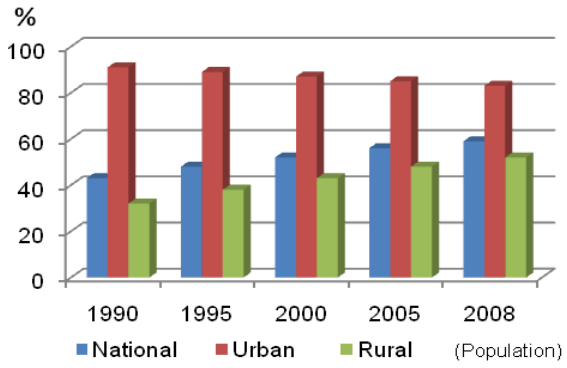
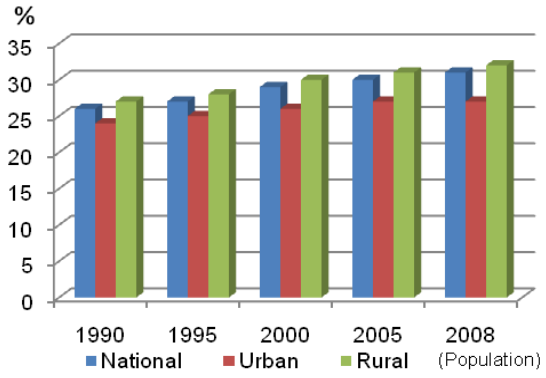


Figure 6: Access to improved sanitation facilities for Kenya



Sources: Authors, using on line databases of WHO / UNICEF

One reason for this observation is the rapid growth of urban centres. At the national level, the proportion of Kenyans with access to improved sanitation increased only from 26% in 1990 to 31% in 2008, an increase of 5% point in 18 years (Figures 6). Nevertheless, unhygienic practices such as open defecation increased marginally to 15 % in 2008 from 14% in 1990. At current progress rate of 31%, access to improved sanitation in Kenya is still low. Rural Kenya still lags behind the urban areas, by a gap that has widened from 8% in 1990 to 25% in 2008. Currently, the proportion of urban and rural population with access to improved sanitation facilities is 52%

and 32% respectively. Generally, coverage in both water and sanitation is highly variable across the country. National figures suggest in Bondo District in Western Kenya, only 13.5% have access to safe water. In Wajir, only about 15.3% of its people have access to any form of improved sanitation.

Projections indicate that by 2015, some 14 million Kenyans will still be without access to improved water sources. This is about 6 % more than the MDG target of 11.5 million people, a difference of about 2.4 million people. For the sanitation sector, Kenya has a projected 26.6 million people lacking access to improved sanitation services in 2015. This is about 12 million people more than the 14.7 million targets in the MDG. From these trends therefore, it is difficult for Kenya to meet the MDG target by 2015.

3.3.2 Drivers of Access to Water and Sanitation Services

The average precipitation in Kenya is 365.6 billion m^3 per year. The country has a low water endowment currently 534 m^3 per capita per year and is projected to fall to 359 m^3 by 2020, due to population growth. The country still has a huge water potential as only 15% of the safe yield of renewable freshwater resources has been exploited to date. This suggests that there is still huge room for investment in Kenya's water sector which should be seen as an opportunity both for the government and development partners.

From USD 66 million in 2000, government budgetary allocations increased by almost five fold to USD 294.6 million in 2008. ODA from development partners increased from USD 23.5 million to USD 143.2 million. Consequently, total WSS funds reached a record of about USD 438 in 2008, up from about USD 90 million in 2000. An average of about 70 % of funding for WSS has originated from Government of Kenya (GoK), while only about 30 % came from the donors. In per capita terms, 1995 to 2008 recorded a dramatic increase in ODA per capita, from about USD 0.5 to a peak of USD 2.4. The sanitation sector recorded a similar increase, from about USD 1.6 to USD 2.8. The water sector recorded its lowest per capita aid allocation of about USD 0.2 in 1998 while sanitation sector recorded its lowest of about USD 0.4 in 2000.

Germany was the largest (including both Multilateral and Bilateral source) donor to water and sanitation sector in Kenya cumulatively over the period 2002 to 2009. Germany provided over USD 123.4 million more than twice as much as IDA the next largest donor with USD 50.6 million. Other donors in the top 5 are Sweden (USD 43.1), France (USD 36.2 million), and Denmark (USD 31.3 million). The African Development Fund (AfDF) ranked seventh among the donors to WSS in Kenya, providing a cumulative amount of USD 18.3 million over the period 2002-2009. This represents 8.8 % of the Bank's total ODA for that period on all sectors in the country.

The 2002 Water Act made major reforms to water policy and created a new institutional framework for the current national water management regime. Through the establishment of the MWI, the government consolidated the responsibility to develop water resources, policy, and overall sector monitoring. An independent regulator, the *Water Regulatory Services Board* (WSRB) was created for the regulation of water and sewerage services, including licensing, quality assurance, and issuance of guidelines for rates, fees, and handling service complaints (USAID, 2007). In an attempt to address this, the Kenyan Government, since 2006, has started to develop a Sector Wide Approach to Planning (SWAP) for the water supply and sanitation sector.

The SWAP increases donor coordination and reduces the likelihood of overlapping initiatives (UNEP, 2004).

In water and sanitation sector, service provision has been dominated by the public sector. Private sector participation is largely limited to consultants and executing contracts for the construction and installation of water systems, and the activities of private water vendors, as well as the production and retail of bottled drinking water. The civil society is actively involved in promoting good governance and social economic development in Kenya. However, civil society organizations need to address the issues of accountability, commitment, capacity and focus on results, impact results and sustainability (KJAS, 2007). M&E activities are generally limited to donor funded projects. This situation adversely affects data quality. Presently, the MWI is responsible for M&E at the national level.

3.3.3 Relationship between inputs and outcomes: Applying the WIDE

The WIDE analysis (Table 3 and Annex 4) shows that given Kenya's scarce water resources, the country has utilised these effectively in generating the observed outcomes in access to water and sanitation.

Table 3: Input Drivers and Progress Outcomes of the Watsan Index for Kenya

Watsan Index of Development Effectiveness components		**Scores**	**Overall Index**	**Rank [12]**	**WIDE**
Input Drivers	Development aid to the water and sanitation sector, as measured by the average yearly per-capita aid to the sector	3	10	38	11
	Domestic resources, as measured by average per-capita gross domestic products	7			
	Water resources, measured by the quantity of per-capita renewable available water	0			
	Government capacity (a component of human resources), measured by the Ibrahim index of African governance for rule of law, transparency and corruption	30			
Progress Outcomes	Progress in the share of population with access to improved water sources, over the period 1995-2008	51	35	27	
	Progress in the share of population with access to improved sanitation facilities, over the period 1995-2008	26			
	Share of population with access to improved water sources in 2008;	34			
	Share of population with access to improved sanitation facilities in 2008	27			

Source: Author's Calculations.

While overall coverage is still low, there is room for some optimism given the recent progress, and given the continued commitments of the international community. The slow pace in the performance of the sector with regards to attainment of MDG is indicative of the fact that more funds are required for developments in the sector. The relationships between access to water and sanitation and some variables, including ODA were explored in a correlation analysis and the results are presented in Table 4. The negative and significant correlation between life expectancy at birth and improved water source is unexpected. Similarly, the positive correlation between

[12] All rankings refer to the subsample of 45 SSA countries for which all data on input and outcomes is available (all but Djibouti, Seychelles and Somalia).

infant mortality rate and improved access to water source is against the intuition. The unexpected relationship may signify the importance of access to improved sanitation not just to water source alone, a view corroborated by the expected association between access to sanitation, life expectancy at birth and infant mortality rate.

3.3.4 Lessons learned and Conclusion

- Strong financial, technical skills and capacity is often insufficient at national and local levels;
- The local communities' ability and willingness to pay for WSS services is a constraint that should always be taken into account in project and program planning;
- Financing from multiple donors may ensure that all the lessons from previous experience be taken into account, but it is also essential that excessive bureaucracy is avoided;
- Communities' involvement in projects is fundamental to ensure success and sustainability;
- Tariff-setting and cost-coverage are key to ensure that the project is properly maintained; this has implications on the choice of the project's type and size;
- Tariffs can often be regressive. Tariffs-setting affects project sustainability and equity outcomes;

Table 4: Correlation with access to water and improved sanitation facilities

	Population	**Human Poverty Index**	**Life expectancy**	**Mortality rate**	**ODA Disbursement to Water & Sanitation**	**Per capita ODA**	**GNI per capita**
Improved water source, (% of total population with access)	0.8322 (0.0054)	0.8193 (0.1807)	(-0.8276) (0.0059)	(0.1820) (0.6393)	0.8227 (0.0872)	0.7514 (0.1432)	0.8493 (0.0076)
Improved sanitation facilities (% of population with access)	(-0.2686) (0.5200)	0.8855 (0.1145)	0.3283 (0.4272)	(-0.2747) (0.5102)	0.4082 (0.4951)	0.4315 (0.4682)	(-0.5031) (0.2038)

Source: Authors based on data from AfDB and OECD data platform

3.4 Uganda

3.4.1 Outcomes: Access to Water and Sanitation

Between 1980 and 2008 access to improved drinking water supplies and sanitation steadily increased at the national, urban and rural areas in Uganda. The most marked improvement has been in access to improved water, which recorded a 24% increase from 43% to 67% over the 18 year period (Figure 7). The increase in access to sanitation services was only at 9% for the entire population, from 39% to 48% (Figure 8). The rural areas also witnessed a steady increase in access to improved water sources in the last two decades. This improvement is a great deal due to the achievement of the national objectives of development of groundwater abstraction sources. The gap between urban and rural areas in access to improved water sources narrowed from 39% points in 1990 to 27% points in 2008. With regards to sanitation, the gap widened from 5% points in 1990 to 11% points in 2008.

Figure 7: Access to improved water sources for Uganda

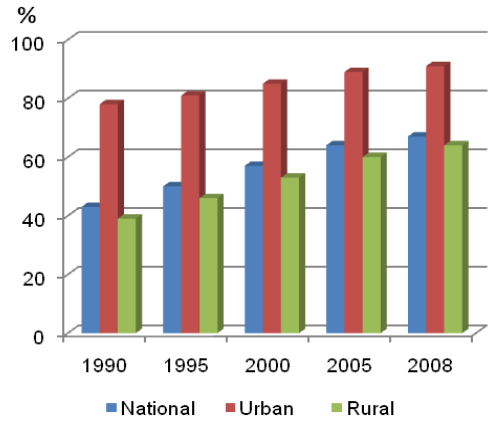
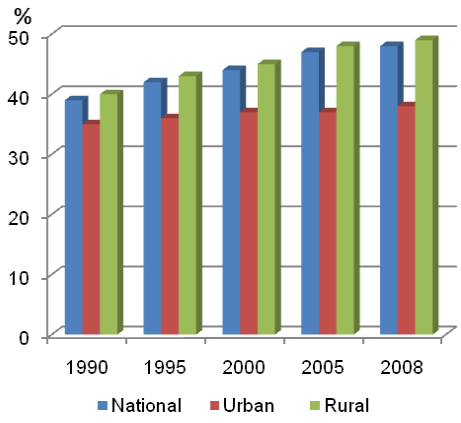


Figure 8: Access to improved sanitation facilities for Uganda



Source: Authors, using on line databases of WHO / UNICEF

Uganda has undoubtedly made significant progress towards the water related MDG targets. At the current progress rate, it is probable that Uganda will surpass the MDG target on access to improved water sources. By 2015, only 23% of the population or 9.44 million Ugandans are likely to lack access to improved water source, as against an MDG target of 29% or 11.9 million people. With regards to sanitation, doubts still remain as to whether the country would achieve the MDG target. It is highly likely that the country will miss the MDG sanitation by about 17% or 6.98 million by 2015, given current trends.

3.4.2 Drivers of Access to Water and Sanitation Services

The total renewable water resources of Uganda is estimated to be about 39 billion m^3 .The volume of renewable water resources for Uganda from 1988 to 2010 have declined from 2053m^3 to 1232 m^3 / inhabitant / year, a reduction by 40 percentage points. The average annual rainfall is 1300mm. Overall the total budget has remained fairly constant during 2001/02 to 2008/09 this period but the relative contributions from external donors and the GoU has changed markedly. From 2005 to 2009 the contribution of the GoU has steadily increased from 35% to 66% of the total amount. Unfortunately, this has been matched by a corresponding decline in external funds; the result is that the overall budget has remained constant. The WSS sub-sector's share of the national budget has declined from 7.9% in 2002/03 to 2.4% in 2008/9. WSS ODA declined from 13% in 1995 to about 4% in 2008. Per-capita ODA disbursement has ever remained below USD 4 during the period. The weak appetite of donors support to WSS is not a reflection of total aid flow to Uganda, primarily provided in other areas.

International Development Association (IDA) led all other donor agencies with an aggregate aid of USD 203.8 million between 2002 and 2009. IDA support to Uganda is more than double the aid flow from the second largest donor Germany (USD 100.1 million) during the same period. Germany was followed by AfDF (USD 86.2 million). The AfDF disbursements represent only 8.6 % of the Bank's total ODA to Uganda for that period on all sectors. Other donors in the top 10 list are Sweden, European Union, Austria, France, Denmark, Japan and United Kingdom. As presented in Annex 3, the total investment required per year for the next 5 years to achieve the WSS MDG targets by 2015 is USD 242 million per year. The combined annual allocated budget and donors flow cannot meet this requirement based on historical data.

In Uganda, the overall responsibility for formulating national water policies rests with the Ministry of Water, Lands and Environment (MWLE), implemented by the Directorate of Water Development (DWD) and National Water and Sewerage Corporation (NWSC). In 2001 a sector-wide approach (SWAP) to planning, implementation, reporting and accountability in the WSS sector was adopted. Compared with most other SSA countries, Uganda projects are noted for high level of ownership; a prerequisite for aid effectiveness. Private Sector Participation (PSP) in Uganda's WSS has been very complementary. They provide maintenance services to water users in rural and peri-urban areas, and they manage piped water services in the majority of small towns that have piped water. The NGOs and CBOs (Community Based Organisation) are also involved in WSS activities. The M&E system in the various sub-sectors is still disaggregated and data integration relies on periodic calls from the various subsector players, especially towards times of joint sector reviews. This is creating problems of data consistency, authenticity, and verification. Uganda is challenged with the issue of inadequate capacity in the sector. Corruption remains a critical challenge in Uganda.

3.4.3 Relationships between inputs and outcomes[13]: Applying the WIDE

As a way of evaluating the WSS situation in Uganda the WIDE has been calculated (see Table 5. The WIDE revealed a very low *Input Drivers*; however, significant progress has been made in terms of *Progress Outcomes*. This suggests that Uganda utilises the available resources effectively.

Table 5: Input Drivers and Progress Outcomes of the WIDE for Uganda

Watsan Index of Development Effectiveness components		**Scores**	**Overall Index**	**Rank[14]**	**WIDE**
Input Drivers	Development aid to the water and sanitation sector, as measured by the average yearly per-capita aid to the sector	8	14	26	13
	Domestic resources, as measured by average per-capita gross domestic products	3			
	Water resources, measured by the quantity of per-capita renewable available water	1			
	Government capacity (a component of human resources), measured by the Ibrahim index of African governance for rule of law, transparency and corruption	43			
Progress Outcomes	Progress in the share of population with access to improved water sources, over the period 1995-2008	68	49	13	
	Progress in the share of population with access to improved sanitation facilities, over the period 1995-2008	32			
	Share of population with access to improved water sources in 2008;	48			
	Share of population with access to improved sanitation facilities in 2008	48			

Source: Author's Calculations.

As expected, the per-capital ODA disbursement to the water and sanitation sector correlates positively with access to improved water sources and improved sanitation facilities but statistically significant only for access to improved water sources. Similarly, there is a positive association between GNI per capital and the proportion of the population using improve water source (Table 6), surprisingly, the relationship between people using improved sanitation facilities and GNI per capita is negative and statistically significant similar to the case for Kenya.

[13] See Section 2.3 for more details

[14] All rankings refer to the subsample of 45 SSA countries for which all data on input and outcomes is available (all but Djibouti, Seychelles and Somalia).

This may be because sanitation is mostly given less attention in financial allocation and the effect of rapid population growth.

Table 6: Correlation with access to water and improved sanitation facilities

	Population	**Human Poverty Index**	**Life expectancy**	**Mortality rate**	**ODA Disbursement to WSS**	**Per capita ODA**	**GNI per capita**
Improved water source, (% of total population with access)	0.8976 (0.0025)	(-0.8558) (0.1442)	0.7211 (0.0435)	(-0.8880) (0.0032)	0.9465 (0.0147)	0.9374 (0.0186)	0.6660 (0.0714)
Improved sanitation facilities (% of population with access)	(-0.2543) (0.5434)	(-0.1286) (0.8714)	-0.3300 (0.4246)	0.2284 (0.5864)	0.1091 (0.8614)	0.0841 (0.8931)	(-0.7928) (0.0189))

Source: Authors based on data from AfDB and OECD data platform

3.4.4 Lessons learned and Conclusion

The high population growth rate in Uganda is a threat to progress in the field of WSS, but in spite of this, the country has made good progress over the last twenty years, and the challenge now is how to sustain the progress made. There is a need to promote more involvement of the private sector. Budgetary discipline and increased transparency involving more stakeholder engagement is also needed, as well as fiscal decentralization and streamlining of the procurement process. Uganda is on track for meeting the MDG targets for improved water, but is likely to lag behind in the case of access to sanitation. Finally, more attention is required on improving the weak technical capacities within NGOs, governmental, and private institutions.

3.5 Burkina Faso

3.5.1 Outcomes: Status of Access to Water and Sanitation

From 1990 access to better water facilities increased steadily from 41% of the total population in 1990 to 76% in 2008, (Figure 9). World Bank (2008) noted that in Ouagadougou, the number of people having direct access to piped water through household connection has more than tripled in six years from 300,000 in 2001 to 1,040,000 people in 2007, representing 130% of the end-of-project target.

The good performance of the water sub-sector is far better than the weak show of the sanitation sub-sector, where the increase ranged from 6% in 1990 to 11% in 2008, an improvement of just 5% over what was already a low base (see Figure 10). These records on sanitation in Burkina Faso are among the lowest in SSA. The gap between urban and rural areas with access to improved water source narrowed from 37% in 1990 to 33% in 2008. On the other hand, the gap between the people using improved sanitation facilities in urban and rural areas of Burkina Faso was relatively constant over the period.

Figure 9: : Access to improved water sources for Burkina Faso

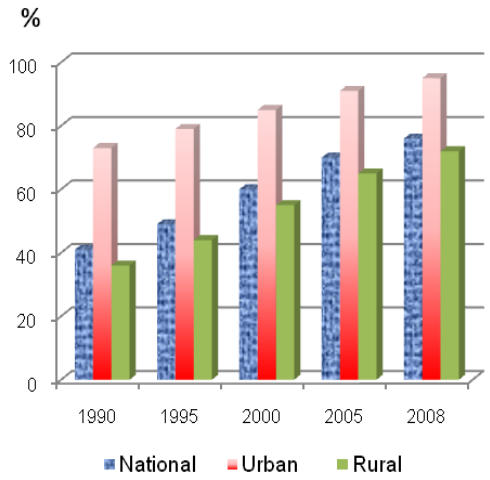
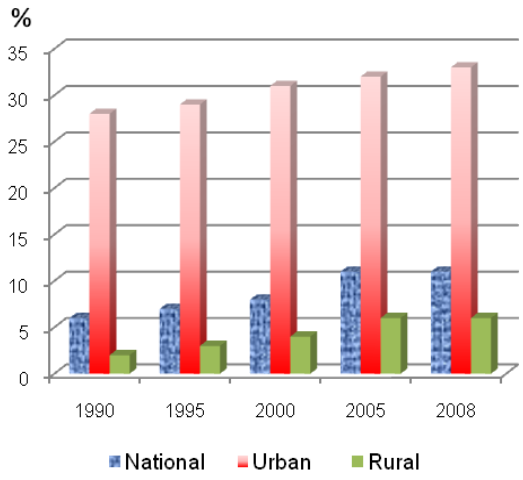


Figure 10: Access to improved sanitation facilities for Burkina Faso



Source: Authors, using WHO / UNICEF online databases

Considering the current progress rate, Burkina Faso is among the few countries in Africa that will surpass the MDG target on access to improved water source. By 2015, only 10% of the population or 0.65 million Burkinabe would lack access to improved water source as against MDG target of 30% or 4.94 million people. However, Burkina Faso will miss access to basic MDG sanitation target by 40% (6.59 million people) by 2015.

3.5.2 Drivers of Access to Water and Sanitation Services

Every year, Ouagadougou, Burkina Faso's capital city receives some 700mm of rainfall. Unfortunately due to local hydro geological-conditions, flat topography, and the intense nature of rain events much of this rainfall is unavailable for use. Based on OECD data, the total development aid contribution from all donors has increased from just over USD 300 million in 1990 to USD 1000 million by 2008. Data obtained from a government source *(Circuit informatisé de la dépense)* provides some breakdown of the aid spent on the two sectors. The share of water sub-sector in the WSS aid from 2004 to 2008 on the average is 95%. In contrast the contribution toward sanitation sub-sector during the same period ranged from 1.7% (2005) to 10.6% (2008). This highlights the contrast in financial commitment between the two sectors and explains why the figures on improved access to water are so much better than those for sanitation.

From 1994-2008, the per capita amount of WSS ODA ranges from USD 0.34 in 1996, to 13.49 in 1999 with a 14-year average of 5.4. In terms of the percentage of ODA aid given to the WSS sector these range from 1.3% in 1996 to 22.7% in 1999 with an average over the 14 year period of 9.5%. World Bank's International Development Association is the largest donor to water and sanitation sector in Burkina Faso, cumulatively over the period 2002 and 2009. The institution provided over USD 161.2 million more than twice as much as the next largest donor France (USD 73.2 million). Other donors in the top 5 are Denmark (USD 70.0 million), EU Institutions (USD 69.5 million) and Germany (USD 65.9 million) respectively. African Development Fund ranked 6th among the donors in Burkina Faso providing (USD 41.5 million) cumulatively within the period 2002-2009. This represents only 5.0 % of the total AfDF funding for that period on all sectors.

As presented in Annex 3, the sum of USD 116.25 million was estimated as the cost of meeting the MDG water and sanitation goal per year until the year 2015; USD 88 million a year for the water sector and USD 28.25 million a year for sanitation. Total public investment is estimated at USD 17.76 million per year: USD 13.3 million for water and USD 3.96 million a year for sanitation. Therefore, there is an investment gap of USD 96 million a year until 2015 (USD 73 million for water and USD 23 million for sanitation) in Burkina Faso.

In the WSS of Burkina Faso, overall technical supervision is provided by the Ministry of Hydraulics. The water management department, the DGRE (Direction de Gestion des Ressources en Eaux*)* and the national water and sanitation office, the ONEA (Office National de l'Eau et de l'Assainissement) share responsibility for infrastructure and water and sanitation projects. The inclusion of the private sector in the Burkina Faso WSS infrastructure has taken place but at a relatively low level. Community and NGOs participation in Burkina Faso's WSS increased in 2004 with the creation of Consultation. Monitoring and Evaluation (M&E) activities are an integral part of WSS programs in Burkina Faso. Inadequate human resources capacity, especially those with relevant qualification and experiences in the water and sanitation sector remain a critical challenge

3.5.3 Relationship between inputs and outcomes[15]: Applying the WIDE index in Burkina Faso

Table 7 provides the basic information on the Burkina Faso's WIDE analysis. These figures suggest considerable progress has been made on access to improved water sources, and a lack of progress on sanitation provisions. The analysis also suggests available resources are being used effectively. In particular aid funded water projects were implemented with satisfactory performance. The projects have been very effective in increasing access to safe water especially for the urban populace.

Table 7: Input Drivers and Progress Outcomes of the WIDE Index for Burkina Faso

Watsan Index of Development Effectiveness components		**Scores**	**Overall Index**	**Rank[16]**	**WIDE**
Input Drivers	Development aid to the water and sanitation sector, as measured by the average yearly per-capita aid to the sector	21	18	19	3
	Domestic resources, as measured by average per-capita gross domestic products	4			
	Water resources, measured by the quantity of per-capita renewable available water	1			
	Government capacity (a component of human resources), measured by the Ibrahim index of African governance for rule of law, transparency and corruption	47			
Progress Outcomes	Progress in the share of population with access to improved water sources, over the period 1995-2008	95	46	16	
	Progress in the share of population with access to improved sanitation facilities, over the period 1995-2008	26			
	Share of population with access to improved water sources in 2008;	62			
	Share of population with access to improved sanitation facilities in 2008	2			

Source: Author's Calculations.

[15] See 2.3 for more details

[16] All rankings refer to the subsample of 45 SSA countries for which all data on input and outcomes is available (all but Djibouti, Seychelles and Somalia).

The relationships between access to water and sanitation and some variables, including ODA were explored in a correlation analysis and results presented in Table 8. The relationship between access to improved water source and all of the variables are as expected; however, the relationship was significant only for ODA disbursement to WSS, per capita ODA, and Human Poverty Index variables. There is strong association between life expectancy at birth, infant mortality rate, and access to improved sanitation facilities. ODA disbursement to water and sanitation, per capita ODA, and GNI per capita variables had unexpected relationship with access to sanitation facilities indicating the subdued attention that the sanitation sometimes get in budgetary allocations.

Table 8: Correlation with access to water and improved sanitation facilities

	Population	**Human Poverty Index**	**Life expectancy**	**Mortality rate**	**ODA Disbursement to Water & Sanitation**	**Per capita ODA**	**GNI per capita**
Improved water source, (% of total population with access)	0.5745 (0.1364)	(-0.9882) (0.0981)	0.5475 (0.1601)	(-0.5484) (0.1593)	0.4418 (0.4563)	0.0329 (0.9528)	0.4475 (0.2663)
Improved sanitation facilities (% of population with access)	0.9749 (0.0009)	(-0.9222) (0.2528)	0.9796 (0.0006)	(-0.9714) (0.0012)	(-0.6311) (0.2536)	(-0.8304) (0.0817)	(-0.2404) (0.5663)

Source: Authors based on data from AfDB and OECD data platform

3.5.4 Lessons learned and Conclusion

There has been a significant rise in funding to Burkina Faso in recent years, but the country needs to be heavily supported if targets on sanitation are to be met. Although a commitment to IWRM has been made by the government since 2003, very little has been done in the country to make this possible. There is a need to set up the right infrastructure to make IWRM a practical possibility. Burkina Faso will surpass the MDG target on access to improved water source by 2015. However, increased investment in sanitation facilities particularly in rural areas of Burkina Faso is urgently required if the MDG set for the country are to be achieved. Overall the great challenge confronting the government in these sectors is to improve its capacity to implement the various national strategies.

4. EXPERTS, BENEFICIARIES, AND OTHER STAKEHOLDERS' VIEWPOINTS

4.1 Introduction

Quantitative and qualitative data were collected from a range of stakeholders. The specific methods involved are as follows. First, structured questionnaire surveys of 36 professionals on water supply and sanitation issues in SSA were implemented in 22 cuntries[17]. Survey respondents were drawn from as wide geographical area in the continent as possible, and represented a range of organizations and disciplines. Second, discussions were conducted through meetings with senior officials from relevant ministries, donor groups, local government, etc. During the field visits, efforts were made to talk with a wide range of WSS project

[17] Burkina Faso, Burundi, DRC, Ethiopia, Ghana, Guinea, Kenya, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda, Senegal, Somalia, South Africa, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

stakeholders. Third, field visits were made to few AfDB financed water supply and sanitation related projects[18]. Fourth, discussions were made with beneficiaries. Finally, relevant data and secondary information including reports were gathered.

4.2 A Consultative Survey of Water Professionals: Survey Results

All 36 respondents considered water and sanitation essential (75%) or extremely important (25%) in terms of its contribution to the development process. Respondents identified the most important factors for increased access to safe drinking water and improved sanitation to be the availability of *adequate financial and technical resources* to carry out the necessary work (33%); the existence of the *political will* to implement the changes (15%), and the necessity for *capacity building and reform* of existing institutions (14%). The picture is slightly different when only the first choice factor for each respondent is taken into account. In this case political will (39%) comes out ahead of capacity building and reform (24%) with adequate financial resources (21%) being in third place (Tables 9).

Table 9: Which factors are necessary to achieve progress in increasing access to safe drinking water and improved sanitation?

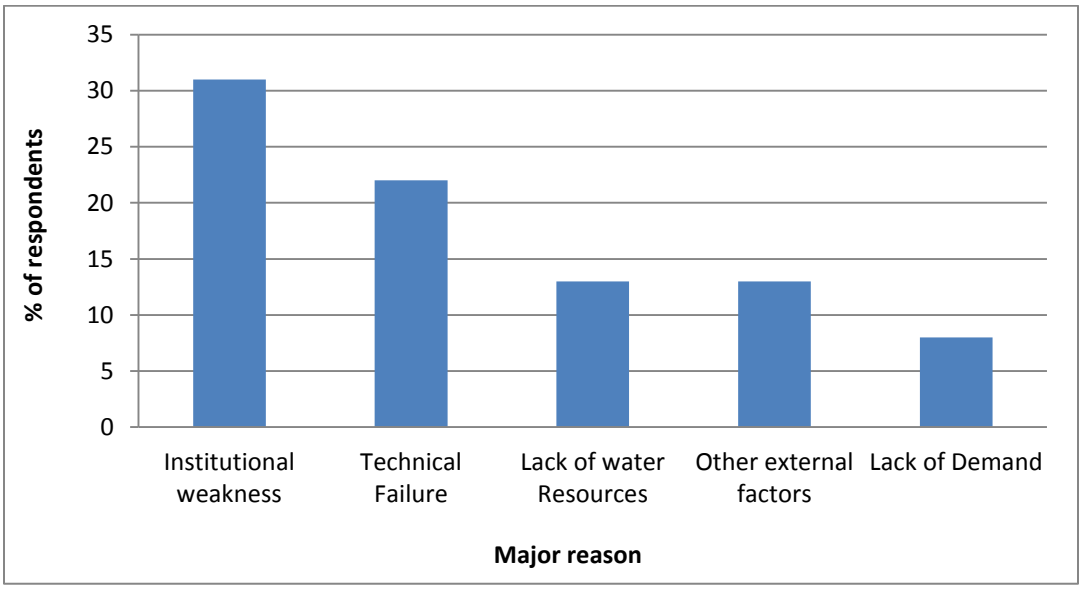
Factors	Three most important factors (%)	The single most important Factor (%)
Adequate Financial and Technical Resources	33	21
Government and Political will	15	39
Capacity building and reform	14	24
Awareness raising and Education	11	12
Better maintenance and monitoring	8	3
Flexible and adaptive approach	6	
Clear well focused policies	6	
Transparency	4	
Integrated multidisciplinary approach	1	
Agreement and cooperation of external agencies	1	

When asked how many past water and sanitation projects are still functioning as they were designed, based on the SSA countries in which they have experience, 14 (39%) of respondents said most, 15 (41%) some, 5 (14%) few and 2 don't know. Significantly none replied that all projects were working as designed. The reasons given for failure are summarized in Figure 11.

The most common is *weakness of managerial and institutional capacity* followed closely by *technical failure*. Both of these causes may be related to lack of financial resources to provide the support required to maintain such projects. Respondents were also asked to comment on any external factors contributing to project failure. The main reason to emerge was the absence of an adequate operation and maintenance program, often stemming from lack of finance. Other responses include the perception that many projects are externally driven and as such lack a sense of community ownership.

[18] Rift Valley Water Supply and Sanitation Project, Nakuru (Kenya); Primary Schools Water Supply and Sanitation project, Kisumu District (Kenya); Mityana and Mpigi Water Supply and Sanitation Project (Uganda); Buhesi Gravity Flow Scheme (Uganda); Ouagadougou/Ziga Drinking Water Supply Project (Burkina Faso); and AEPA-FAD Grand South Project (Madagascar)

Figure 11: Major reasons for WSS project failures



Meanwhile, the visits to AEPA-FAD Grand Sud project in Madagascar revealed the importance of involving the community in the whole project process. The beneficiaries confirmed that the two main outcomes of the provision of safe drinking water were household time savings, and the reduction in the incidence of water borne diseases. The former especially benefits women and has major effects on gender balance and household wellbeing. The latter mostly benefits children, and potentially leads to human capital accumulation. All respondents but one affirms that *institutional arrangements act as barriers to progress in the provision of water and sanitation* in their country of expertise. By far the most commonly cited constraint is the tendency toward a short term approach to projects leading to a paucity of post construction support mechanisms. Corruption and a failure to implement laws and regulations were also put forward as reasons for failure.

5. CONCLUSIONS AND RECOMMENDATIONS

Progress in water and sanitation sector

Over the period of 1990 to 2008, the rate of access to improved water source in SSA increased from 49% in 1990 to 60% in 2008, a marginal increase of less than 1% per annum. Access to improved sanitation increased from 27% in 1990 to 37% in 2008. To meet the MDG target on access to improved water, the rate of improvement or coverage will have to at least double from 14 million to 28 million per annum. For sanitation the coverage rate has to increase four fold from 7 million per annum to almost 28 million per annum. To add to this, the largest proportion of those without improved drinking water and sanitation services are poor people. Obviously, performance is heterogeneous across countries.

5.1 Drivers or determinants of performance

The determinants of performance in the WSS sector in general and WSS ODA effectiveness adopted in this study includes:

- **Technical/physical Factors:** These factors encompass a range of issue including the water resources endowment of countries; climate change and climate variability posing flood and drought hazards, the geographic area size of the countries; availability of basic meteorological and hydrological data, availability and choice of technologies, and availability of manpower with relevant technical and managerial skills.

- **Water institutions and policies:** The water institutional environment and structure provides a clearly defined water laws, water policies, and water rights. The water law gives legal backing to water policy and provides the operational framework and enforces the power of water administration. Water policies relate to the declared statements as well as the intended approaches of governments for water-resources planning, development allocation, and management.

- **Social milieu and localized institutions:** Many elements are recognized under this category of aid effectiveness and WSS sector performance conditioning factors. The main issues relate to population size (including growth rate and human settlement pattern), socioeconomic and behavioral characteristics of the beneficiary communities, and the prevailing local water institutions. Uncontrolled high population growth rate dwarfs governments, donors and NGOs current efforts in extending water access coverage in some SSA countries. Particularly the high rate of rural-urban migration and rapid urbanization pushes the demand for access to clean drinking water, shelter, and sanitation beyond the capacities of major SSA cities and towns. Failure to understand the socio-economic and behavioral features of intended beneficiaries and the indigenous African water institutions will inevitably limit communities' participation in projects or programs severely constraining the success of the latter.
- **Economic Factors:** Needless to say that the general water supply and sanitation situation of the country, ceteris paribus, is conditioned by the level of economic development of the country. Global economic shock may also contribute to the worsening of the WSS sector by for example affecting the level of bilateral and multi-lateral WSS ODA.

- **Financial Factors:** Since water resource has a public good feature, it is mainly the governments that are responsible for WSS financing, cost recovery, and management. Corruption also shrinks the effective amount of financial resources meant for project implementation. The current level of donor allocations to WSS sector is not at the level desired. The water tariff setting mechanism often penalizes the poor.

5.2 Key recommendations: redressing past anomalies in WSS sector for greater performance and development aid effectiveness

The recommendations discussed in the following sections derive from knowledge acquired during the field missions, through a survey of sector practitioners, country case studies and comparative analysis of the WIDE results.

Implement Effective Monitoring and Evaluation Systems: Development aid in the water and sanitation sector is often spent without setting up a proper baseline, and proper monitoring and evaluation systems. In extreme cases, countries actually missed a baseline for the assessment of progress towards the MDGs.[19] However, the existence of a good monitoring and evaluation system is bound to increase the effectiveness of development aid. Moreover, the field visits also

[19] This was found to be the case for sanitation in Burkina Faso and Madagascar during the field missions undertaken by the authors of this paper.

revealed that data being collected at the local level must be scrutinized before being accepted for use in publications. What may be recorded in official water master-plans may be far from the reality of what is actually functioning in practice. It is important to note that there is currently a real need for greater harmonization in data collection strategies.

Set up Enabling Institutional Frameworks: It is important that aid recipients take specific action to remove inefficiencies within their own resource management systems. In many countries, different ministries are given responsibility for different parts of the same job. *The diverse management responsibilities impacting on water and sanitation services must be streamlined for greater efficiency. Embedding water services within economic planning units is also worth consideration.* Of the 27 SSA countries included in the 2009-2010 CSO (Country Status Overview) and GLAAS Global Annual Assessment of Sanitation and Drinking-Water country survey, only eight have policies for both urban and rural water and sanitation, agreed upon with stakeholders and published. Despite the existence of policies, many countries reported either lack of clear definition of institutional roles for their implementation, or failure to operationalize the definition.

Develop Integrated Water Resource Management (IWRM) Policies: It is notable that many countries on the continent have developed IWRM policies, but some have made little progress in implementation. IWRM policies aim to ensure that water is used to achieve social and economic development goals, while guaranteeing sustainable vital ecosystems for future generations to meet their water needs.

Enhance the soft-side: Invest in Capacity Building, Awareness-Raising and Education: In some cases water and sanitation departments are understaffed not just in absolute number but also in the number of people equipped with the required technical qualification. Aid absorption and effectiveness are affected by countries' human capacity in both national and local governments, and in service provision bodies. Donor agencies should continue to ensure that this type of capacity is built into all future visions and national programs, supporting training programs within the local training system. Another area that needs attention within the water and sanitation sector is public awareness-raising, and education. Government staff and members of the public both need increased understanding of the intricate links between water, sanitation and health. Sustainable policies can only succeed when people are adequately aware of the problems they face.

Strengthen Private Sector Participation: Donors and recipient countries should leverage the contribution of the private sector, which can play an important role both in terms of capital mobilization and capacity support, as well as through the provision of competitive supply chains to meet the needs of the WSS programs. Beyond installation, private sector participation is generally limited in the provision of spare parts, but in most cases this activity is unviable as a stand-alone private sector venture. At the micro level, the private sector ensures distribution where networks are missing through water vendors, which creates employment. Therefore the real issue becomes to create competition among vendors and avoid monopolistic scenarios, which can be done through effective regulation. The potential of the private sector can be leveraged through properly designed public-private partnership schemes.

Ensure Sustainability by Expanding Projects' timelines: Lack of progress in the provision of water supply and sanitation in SSA is partly due to the non-sustainability of past development projects. The involvement of the private sector can improve sustainability by setting the appropriate financial incentives. Water pricing may sound unethical to many, but field evidence reveals that the poor are already paying high prices for water supply both in urban and rural

areas. Although the appropriate cross-subsidies must be put in place, it is important to note that pricing is an important determinant of sustainability, and that a failed project implies much higher costs for the poor. The proper consideration of cost-recovery, maintenance and sustainability requires that the donors extend the timeline of their involvement in the project. A capital sum should be included right from the project proposal stage, to create a revolving fund which could then be used as the 'cash float' to support the operational maintenance of schemes.

Increase Stakeholder Participation and Coordination: Stakeholder participation is particularly important to guarantee that the most urgent needs are prioritized, appropriate solutions are selected, and outcomes are maintained after project completion. The role of NGOs and Water Users Associations (WUA) are particularly important to ensure project ownership by the end users and results sustainability. NGOs provide a voice to beneficiary communities by which service quality assurance can be gauged. Water Users Associations (WUAs) represent stakeholders who are closest to the main beneficiaries of water and sanitation projects.

Reform Urban Utilities: Countries that have adopted well-designed water utility reform plans are substantially increasing access to services, financial sustainability, and the quality of services provided. The types of reform that have been demonstrated to be most successful in fixing troubled water and sanitation utilities include:

- Introduction of incentives for employees that directly tie bonuses to performance;
- Introduction of improved commercial systems, including metering and metered billing;
- Introduction of knowledge and information systems for monitoring and evaluation;
- Services to poor consumers that are financially sustainable and tailored to local needs

Improving Governance and Procurement Rule: Corruption can heavily impact on aid effectiveness by either reducing the amount of resources actually invested in the projects, or by distorting design and objectives. Most practitioners acknowledge that corruption occurs widely in the water sector. One way in which donors tackle corruption is by establishing rigorous procurement rules. A more systematic approach would involve strengthening the legal institutions of the recipient countries; increase the share of soft-side investments, foster effective institutional frameworks and increase capacity and ownership.

Allocate adequate financial resources: There is a need for some of the funds to be ring-fenced, to ensure adequate representation of water and sanitation in central and local government budget allocation decisions. There is clear evidence of sanitation neglect, in particular, in each of these case studies. As a result, the MDG sanitation target is unlikely to be met by 2015, or in some places, even by 2050. It is important to note however, that even when this MDG target is reached, there will be millions of people across SSA facing conditions of open defecation. While this situation remains, the donor community must guarantee that the impetus generated by the MDGs is maintained, to ensure that all unsanitary conditions remaining will be totally eradicated during the next period of global development planning.

5.3 Implication for the African Development Bank and other Stakeholders

Given the fact that many facilities are not optimally operating after completion of projects, involvement of the Bank and other development partners beyond project term is worth consideration. Especially, continues capacity development activities led by the concerned governments are crucial for sustainable operation and maintenance. The design of innovative solution to resolve the issue of operation and maintenance is critical to increase results sustainability. A capital sum should be included right from the project proposal stage, to create a

revolving fund which could then be used as the 'cash float' to support the operational maintenance of schemes. While this would incur a marginal increase in the overall budget, it would certainly increase the effectiveness of the spending by ensuring operation and maintenance issues were addressed in a timely manner. The implementation of such a system would of course require some institutional and human capacity development, but this is something which should be supported anyway within any overall national development strategy.

The weak technical and administrative capacities call for more donors' investment in capacity building for the sector's operators in both public and private sectors. Donor's supports are also required to ensure budgetary discipline and increased transparency, as well as fiscal decentralization and streamlining of the procurement process. Donors could make important contribution to regional water development through funding large scale multipurpose integrated water project rather than individual smaller projects. Donors and recipient countries should leverage the contribution of the private sector, which can play an important role both in terms of capital mobilization and capacity support. Greater participation of private sector is required, as the available resources from user tariffs, government and development aid, has not proven to be a reliable source of financing.

Discussions in the preceding section showed clearly that the sanitation sector is often neglected or given less priority in the general government budget allocation. This is reflected in the current low level of progress in the sub-sector. Hence, increased investment in sanitation facilities particularly in rural areas is highly recommended. Greater attention should however be given to adequate public awareness and sensitisation including hygiene education for the correct use of latrines and cleaning of hand after defecation. With regards to household sanitation, government and donors can support the households in the construction of pit latrines, with the provision of the concrete slabs etc. The householder or community will dig the pit and complete other works on the project. Evidence from Kenya and Uganda revealed that the implementation of the large scale eco-sanitation systems has been effective. This kind of sanitation provision should be promoted for adaptation and uptake in other countries.

For the WSS sector to achieve greater performance and increase the effectiveness of development, the Bank and development partner has a role in the implementation of effective monitoring and evaluation systems. These would reduce or eliminate the divergence of information from different data sources in the WSS. The need for cross subsidization to ensure basic provision must be considered by relevant authorities. While this may reduce the number of projects that can be done, it will increase their long term viability and increase the effectiveness of service delivery.

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Annexes

Annex 1: Access to improved water and Sanitation sources (% of total population).

	Year										Variation (a)	
	1990		1995		2000		2005		2005			
Country	Water	Sanita	Water	Sanita	Water	Sanita	Water	Sanita	Water	Sanita	Water	Sanita
Angola	36	25	36	30	41	40	47	50	50	57	14	32
Burundi	70	44	71	45	72	45	72	46	72	46	2	2
Benin	56	5	61	8	66	9	72	11	75	12	19	7
Burkina Faso	41	6	49	7	60	8	70	11	76	11	35	5
Botswana	93	36	94	44	94	50	95	57	95	60	2	24
Central African Rep.	58	11	60	15	63	22	65	29	67	34	9	23
Côte d'Ivoire	76	20	77	21	78	22	79	23	80	23	4	3
Cameroon	50	47	57	48	64	47	71	47	74	47	24	0
Congo, Dem. Rep.	45	9	44	12	44	16	45	20	46	23	1	14
Congo, Rep.					70	30	71	30	71	30	1	0
Comoros	87	17	90	22	92	28	95	35	95	36	8	19
Cape Verde			82	40	83	45	84	52	84	54	2	14
Djibouti	77	66	78	66	83	63	89	58	92	56	15	-10
Eritrea	43	9	46	10	54	11	60	13	61	14	18	5
Ethiopia	17	4	22	5	28	8	35	10	38	12	21	8
Gabon			84	36	85	36	86	33	87	33	3	-3
Ghana	54	7	63	8	71	9	78	11	82	13	28	6
Guinea	52	9	58	12	62	15	68	17	71	19	19	10
Gambia	74		79	60	84	63	89	65	92	67	18	7
Guinea-Bissau			52	16	55	18	58	20	60	21	8	5
Equatorial Guinea			43	51	43	51	43	51			0	0
Kenya	43	26	48	27	52	29	56	30	59	31	16	5
Liberia	58	11	61	13	65	14	67	16	68	17	10	6
Lesotho	61	32	64	31	74	29	83	28	85	29	24	-3
Madagascar	31	8	34	9	37	10	40	11	41	11	10	3
Mali	29	26	36	29	44	32	51	35	56	36	27	10
Mozambique	36	11	38	12	42	14	45	15	47	17	11	6
Mauritania	30	16	36	18	40	21	45	24	49	26	19	10
Mauritius	100	91	99	91	99	91	99	91	99	91	-1	0
Malawi	40	42	51	47	63	50	74	54	80	56	40	14
Namibia	64	25	73	27	81	29	88	31	92	33	28	8
Niger	35	5	39	5	42	7	45	9	48	9	13	4
Nigeria	47	37	50	36	53	34	57	32	58	32	11	-5
Rwanda	68	23	67	32	67	40	66	49	65	54	-3	31
Sudan	65	34	63	33	61	34	59	34	57	34	-8	0
Senegal	61	38	63	41	65	45	68	49	69	51	8	13
Sierra Leone			57	10	55	11	51	12	49	13	-8	3
Somalia			21	21	23	22	28	22	30	23	9	2
São Tomé e Principe			75	20	78	21	85	24	89	26	14	6
Swaziland			53	48	55	49	64	53	69	55	16	7
Seychelles												
Chad	39	6	42	6	45	7	49	9	50	9	11	3
Togo	49	13	52	13	55	12	58	12	60	12	11	-1
Tanzania	55	24	54	24	54	24	54	24	54	24	-1	0
Uganda	43	39	50	42	57	44	64	47	67	48	24	9
South Africa	83	69	84	71	86	73	89	75	91	77	8	8
Zambia	49	46	51	47	54	47	58	47	60	49	11	3
Zimbabwe	78	43	79	43	80	44	82	44	82	44	4	1
	49	27	52	28	55	29	58	31	60	31	11	4

Source: Joint Monitoring Program (http://www.wssinfo.org/en/welcome.html). Note: (a) The variation is calculated as difference between latest and earliest access rate data.

Annex 2: Watsan Index of Development Effectiveness

Abb.	Country	Inputs	Inputs rank	Outcomes	Outcomes rank	WIDE
AGO	Angola	12.5	30	59.4	5	25
RWA	Rwanda	11.2	34	49.8	11	23
ZWE	Zimbabwe	3.5	44	40.2	21	23
CAF	Central African Rep.	10.5	36	48.2	14	22
MWI	Malawi	15.3	21	67.0	1	20
COM	Comoros	12.6	28	54.9	8	20
BDI	Burundi	5.3	43	35.3	26	17
GMB	Gambia	18.4	17	62.9	2	15
UGA	Uganda	13.7	26	48.7	13	13
CIV	Côte d'Ivoire	7.6	40	33.8	28	12
CMR	Cameroon	12.6	29	45.7	18	11
KEN	Kenya	10.0	38	34.6	27	11
COD	Congo, Dem. Rep.	3.2	45	26.4	34	11
NGA	Nigeria	6.6	41	26.0	35	6
GNB	Guinea-Bissau	10.1	37	30.7	32	5
ZAF	South Africa	33.7	7	60.7	4	3
SWZ	Swaziland	19.8	13	51.8	10	3
BFA	Burkina Faso	18.2	19	46.3	16	3
GIN	Guinea	14.7	24	39.6	22	2
ERI	Eritrea	12.3	32	32.9	30	2
BWA	Botswana	43.0	4	61.1	3	1
NAM	Namibia	32.8	8	55.8	7	1
SDN	Sudan	5.8	42	20.8	42	0
TCD	Chad	9.1	39	21.4	41	-2
CPV	Cape Verde	36.9	6	53.8	9	-3
LSO	Lesotho	20.4	12	46.6	15	-3
ETH	Ethiopia	11.3	33	26.0	36	-3
MUS	Mauritius	54.9	2	58.6	6	-4
MLI	Mali	18.4	16	43.4	20	-4
BEN	Benin	17.3	20	37.4	24	-4
TGO	Togo	10.7	35	23.2	39	-4
STP	São Tomé e Principe	42.1	5	49.0	12	-7
SEN	Senegal	26.3	9	46.3	17	-8
GHA	Ghana	20.5	11	44.8	19	-8
ZMB	Zambia	18.8	15	37.5	23	-8
LBR	Liberia	14.7	23	31.3	31	-8
NER	Niger	12.4	31	22.0	40	-9
MRT	Mauritania	18.2	18	33.6	29	-11
MOZ	Mozambique	14.0	25	24.9	37	-12
SLE	Sierra Leone	13.0	27	11.4	45	-18
TZA	Tanzania, United Rep.	14.9	22	19.8	43	-21
COG	Congo, Rep.	22.9	10	29.2	33	-23
GAB	Gabon	72.1	1	35.6	25	-24
MDG	Madagascar	19.7	14	16.8	44	-30
GNQ	Equatorial Guinea	48.4	3	23.5	38	-35
DJI	Djibouti	.	.	.	.	.
SYC	Seychelles	.	.	.	.	.
SOM	Somalia	.	.	.	.	.

Source: Authors' calculations

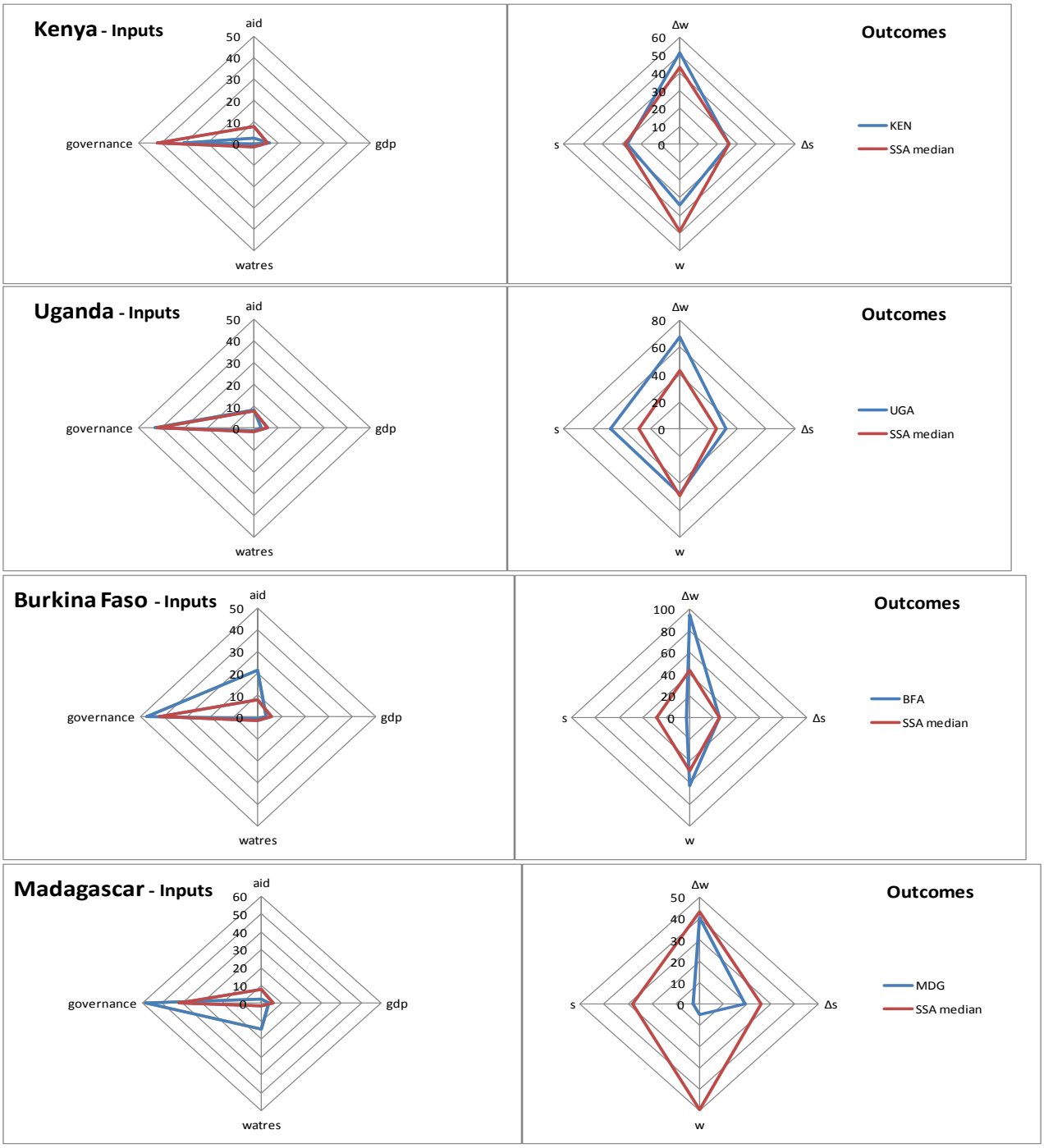
Annex 3: Investment Requirement

Country	Water/ Sanitation	Rural/ Urban	Total Investment Required			Public Invest Required	Planned Public Invest	Surplus (Funding Gap)
			New	Rehab	Total			
			(m USD/year)					
Burkina Faso	Water	Rural	62	8	70	69	11	-58
		Urban	1	17	18	18	2	-15
		Sub-total	64	24	88	87	13	-73
	Sanitation	Rural	15	1	17	15	0	-14
		Urban	12	–	12	12	4	-8
		Sub-total	27	1	28	27	4	-23
		Total						
Kenya	Water	Rural	12	51	63	57	33	-24
		Urban	53	22	75	67	77	10
		Sub-total	65	73	138	124	110	-14
	Sanitation	Rural	9	25	34	0	2	2
		Urban	51	14	65	59	14	-45
		Sub-total	60	39	99	59	16	-43
		Total						
Madagascar	Water	Rural	24	7	31	26	52	26
		Urban	14	9	23	7	21	14
		Sub-total	38	16	54	33	73	40
	Sanitation	Rural	18	41	59	6	4	-2
		Urban	2	4	6	1	15	14
		Sub-total	20	44	65	6	19	13
		Total						
Uganda	Water	Rural	29	44	73	69	46	-23
		Urban	14	6	20	20	54	34
		Sub-total	43	50	95	89	100	11
	Sanitation	Rural	35	68	103	35	10	-25
		Urban	38	10	49	18	9	-9
		Sub-total	73	78	147	53	19	-34
		Total						

Source: Computed using data from AMCOW *et al* (2006)

Annex 4: Country profiles of the Watsan Index of Development Effectiveness

Comparison of each country with the SSA sample median score. When the solid line indicating the country itself is outside of the dotted line (median), this suggests that the specific country is either benefitting from relatively high input drivers, or the country is achieving relatively high progress outcomes. Note in some cases the country score and sample median are so similar that they are difficult to discern.



Source: Authors' calculation

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